

# **Users Manual**

# **EV8280U-MD**

# **Speed Dome Camera**

**Firmware Version 1.1.2**  
**Document Revision A**



# About This Guide

The User's Manual provides functionality and instructions for the 1080p/5M series which includes the following model series:

- EV8180
- EV8280
- EV8580
- EV8780
- EV8781
- EV8582
- EV8383
- EV8581
- EV8782

## Before Using the IP Camera/Video Server

- ✓ Check the PC requirements
- ✓ Review the OS platform requirements
- ✓ Read an special and import precautionary information
- ✓ Having basic knowledge of network setup and configuration will be helpful

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# **1 INTRODUCTION**

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This guide is for the use with the 1080p/5MP series using firmware version 1.1.2.002.

## 2 THE LIVE VIEW

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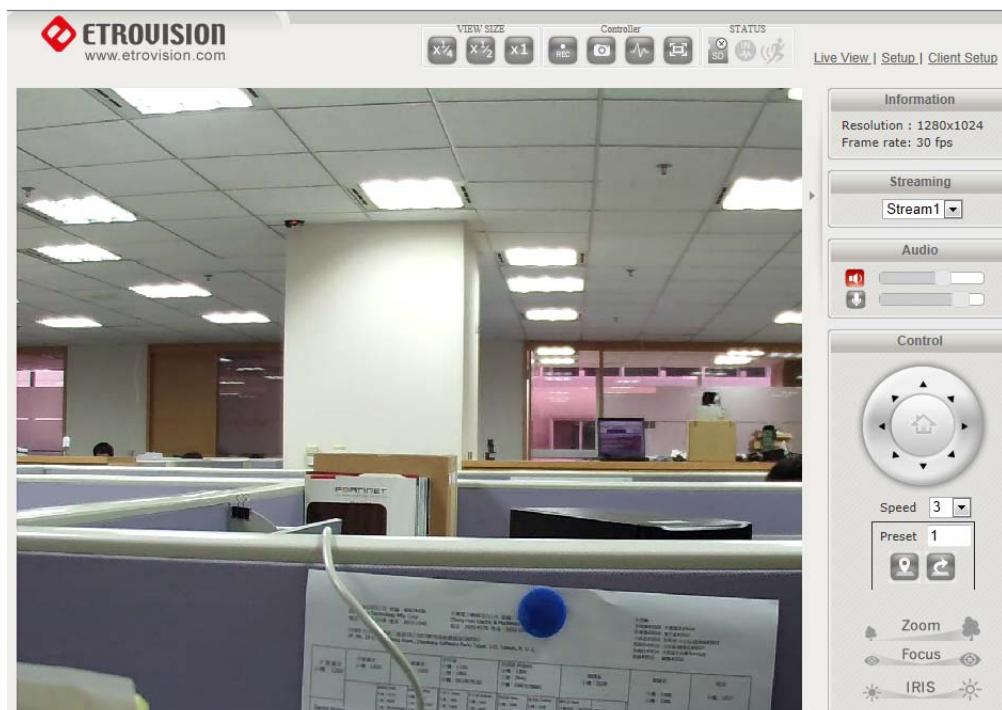
The IP camera web interface is made up of two main pages: the Live View page and the Setup page. The Live View provides the current display from the IP camera along with selected settings, configuration and functionality.

A login is required to access the web UI. The administrator username is “root”, and the password by default is “pass”.

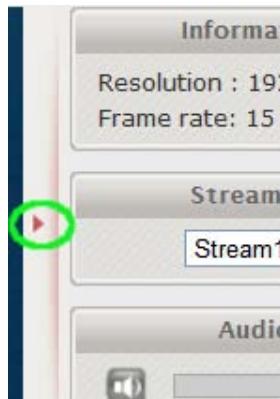


After logging into the IP camera via the browser, the user is first presented with the Live View interface.

Below is an example of the Live View page. Following the screenshot is a discussion of the different areas within the Live View page.



The right hand panel (Information, Streaming, Audio, Control) can be hidden by clicking the small arrow bordering the video and Streaming pane.



Click the arrow (highlighted in green) to hide/display the right side panel.

## 2.1 Live View, Setup & Client Setup

In the top right corner of the screen are three links.

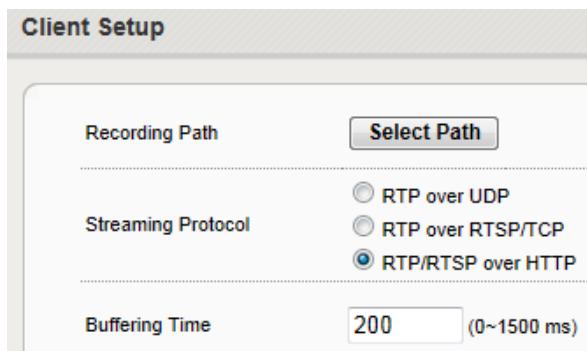
[Live View](#) | [Setup](#) | [Client Setup](#)

- Live View: the main viewing screen with various controls.
- Setup: provides the interface for most of the camera configuration.
- Client Setup: configuration for PC client settings such as storage directory, and web UI streaming preferences.

### Client Setup

The Client Setup provides options to modify the recording path, streaming protocol and buffering time. Streaming protocol and buffering time relate to streaming settings for the web UI on the client PC. These settings are only applied for the browser session, and don't persist after the browser is closed.

Settings apply to a specific PC; they are not universal.



### Recording Path

**Recording Path** is used to define the directory where snapshot images and video will be stored.

## Streaming Protocol

RTP/RTSP over HTTP is the default. This is the most flexible setting in that it streams using port 80 which should likely require no client router configuration.

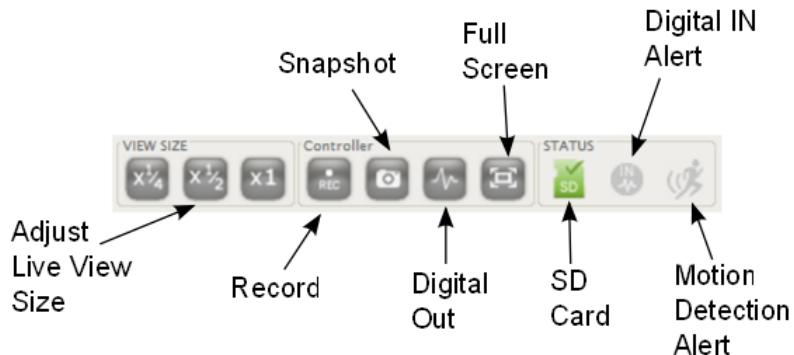
RTP over UDP may use less bandwidth than the other options, but it may also result in inferior video quality since packets may be lost in transmission (more common over WAN) and may require additional router client configuration for UDP traffic.

See section **5 Router/Firewall Configuration** for more information on network configuration considerations.

## Buffering Time

**Buffering Time** can be increased if video appears to lag due to network latency. However, an increased buffer will result in increased lag between real time.

## 2.2 Controls and Status



The View Size controls adjust the viewable screen size in Live View. The Zoom feature can be used, and

Record and Snapshot will capture video/snapshots to the local hard drive.

Digital Out will trigger a digital output signal (e.g. to an alarm).

Full Screen will display video in full screen mode. Click the **Esc** key to exit Full Screen mode.

SD Card shows the status of the SD card.

Digital In Alert will display when a digital in alert has been triggered.

Motion Detection Alert will display when motion detection has been triggered.

## EV8280

The EV8280 speed dome camera has 6 digital input connections. Therefore, the Live View Digital IN alert displays 6 separate signals labeled 1-6.



## 2.3 Digital Zoom

The Digital Zoom feature allows zooming in on a specific area. When using the View Size controls, a magnifying glass icon will replace the mouse pointer icon.



To magnify a specific area, place the magnifying glass icon over the desired area and left click the mouse. Additional left mouse clicks will continue to magnify wherever the mouse is placed.

To zoom out, right click the mouse.

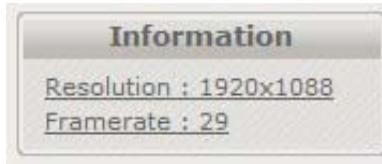
If the mouse is moved to the edge of the image window, the mouse icon will change to a white, triangular icon.



This icon allows moving the view using electronic PTZ if the functionality is available and enabled.

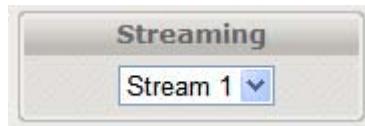
## 2.4 Information

Resolution and frame rate will be displayed in the Information pane.



## 2.5 Streaming

To toggle between different video streams, use the Stream drop down list.



The number of ROI which are enabled in the Video Setting - Profile Setting will determine the number of streams available for viewing. See the "Video Control - Video Setting" section for more information.

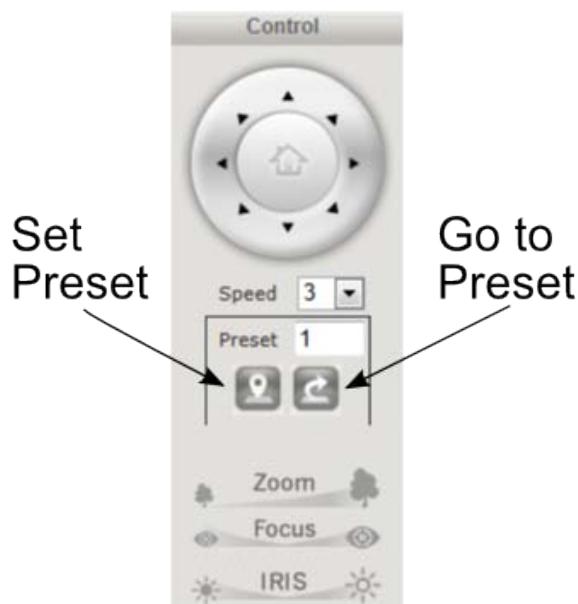
## 2.6 Audio

Audio volume controls for speaker and microphone. Clicking on the icon will mute or enable.



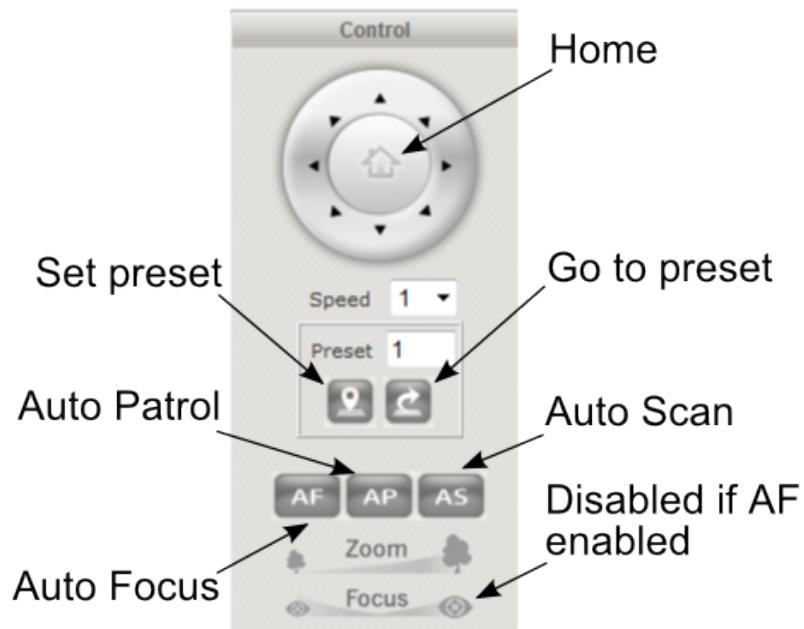
## 2.7 Control (PTZ Control)

The PTZ control panel will not be present in those models where PTZ will not be used (e.g. EV8580). Use the Set Preset button to mark a preset, and the Go to Preset button to use a preset.



## EV8280 Control

The EV8280 speed dome camera has some additional PTZ controls displayed in the Control panel. For more information about the EV8280's PTZ functionality, see the section [EV8280 PTZ Control Settings](#).



## 3 SETUP

---

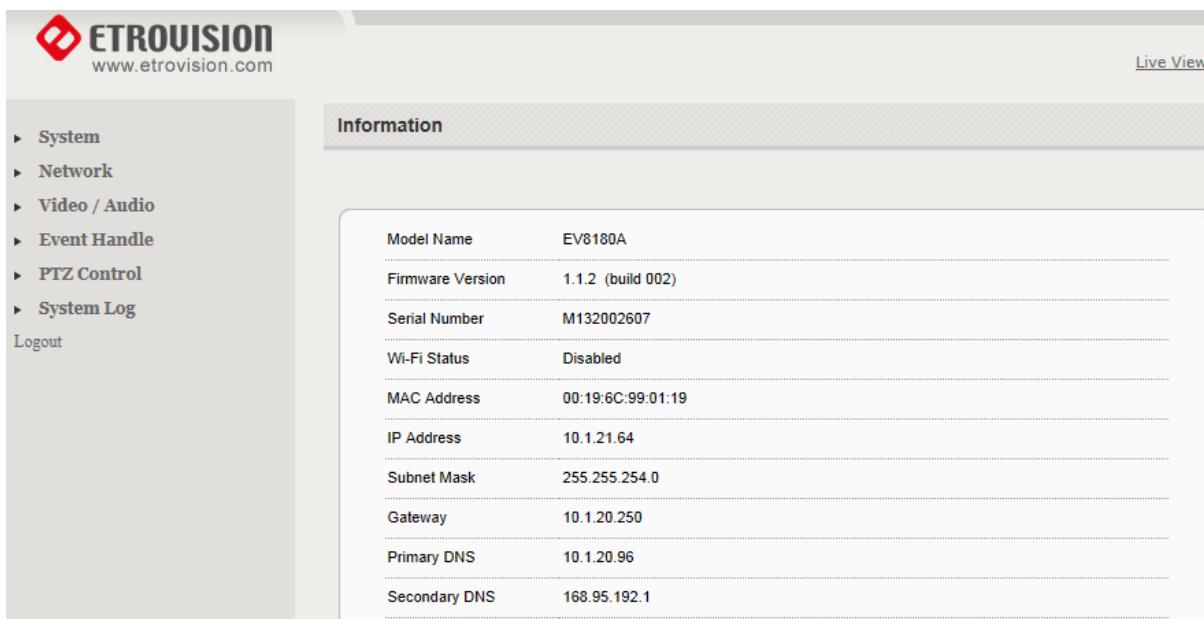
The web interface is made up of two main pages: the Live View page and the Setup page. The Live View page interface was introduced in the previous section.

The Setup interface is primarily used for viewing and configuring the IP camera's settings.

From the Live View page, click the Setup link at the top right side:

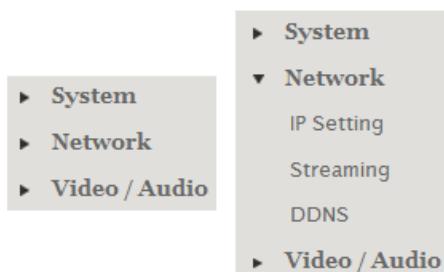


Below is a screenshot of the Setup page. The initial page displayed is the "System Information" page.



Model Name	EV8180A
Firmware Version	1.1.2 (build 002)
Serial Number	M132002607
Wi-Fi Status	Disabled
MAC Address	00:19:6C:99:01:19
IP Address	10.1.21.64
Subnet Mask	255.255.254.0
Gateway	10.1.20.250
Primary DNS	10.1.20.96
Secondary DNS	168.95.192.1

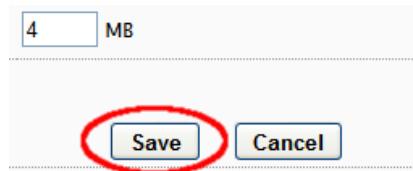
The left hand panel lists the configuration nodes which can be viewed and modified. Clicking on an item will reveal sub menus which are available.



To return to the Live View page, click the Live View link in the right hand corner.



**NOTE:** Configuration changes in the Setup interface require clicking the **SAVE** button. Otherwise, changes will not be applied.



The following discusses the different basic configuration options within the Settings page.

## 3.1 System – Information

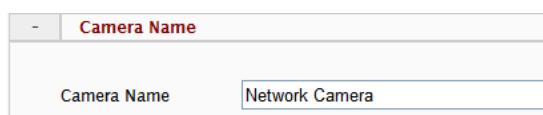
Model Name	EV8180A
Firmware Version	1.1.2 (build 002)
Serial Number	M132002607
Wi-Fi Status	Disabled
MAC Address	00:19:6C:99:01:19
IP Address	10.1.21.64
Subnet Mask	255.255.254.0
Gateway	10.1.20.250
Primary DNS	10.1.20.96
Secondary DNS	168.95.192.1

The Information page is always the initial page displayed when switching to the Setup view. Basic information related to the IP camera is displayed here.

The page only displays information; no changes can be made here.

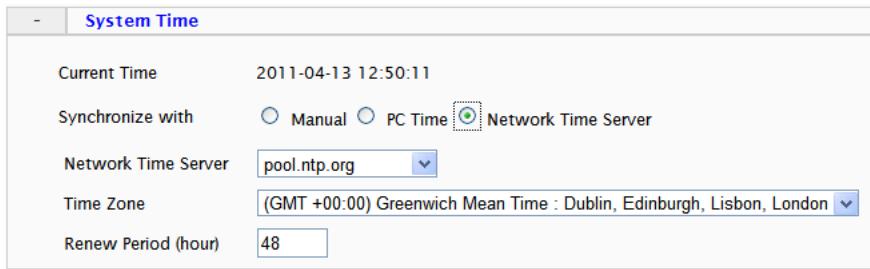
## 3.2 System – Generic Setting

### Camera Name



Enter a camera name if a specific name is desired.

## System Time



Current Time	2011-04-13 12:50:11
Synchronize with	<input type="radio"/> Manual <input type="radio"/> PC Time <input checked="" type="radio"/> Network Time Server
Network Time Server	pool.ntp.org
Time Zone	(GMT +00:00) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
Renew Period (hour)	48

3 options are available:

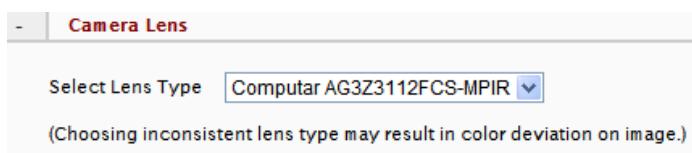
- Manual: insert time manually
- PC Time: set to the current PC time
- Network Time Server: periodically synchronizes with a time server

For **Network Time Server** two standard options are provided. If another time server is preferred, then choose **others** from the list and add the address of the time server which will be used.

Renew Period specifies the synchronization schedule.

## Camera Lens (for EV8180 models only)

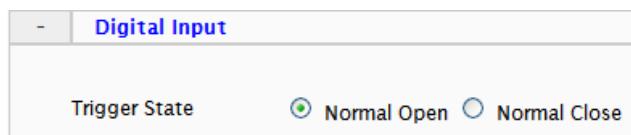
Select the appropriate lens type for the camera. A mismatch between the Camera Lens setting and the actual lens type may result in color deviation.



Select Lens Type	Computar AG3Z3112FCS-MPIR
------------------	---------------------------

(Choosing inconsistent lens type may result in color deviation on image.)

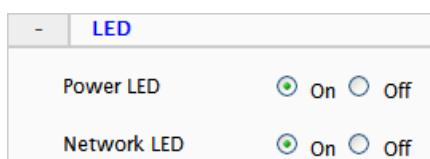
## Digital Input



Trigger State	<input checked="" type="radio"/> Normal Open <input type="radio"/> Normal Close
---------------	---

This defines the method by which the digital in sensor operates. If the normal condition is open (N.O.), then the alarm will be triggered when the circuit is closed. The opposite applies for N.C.

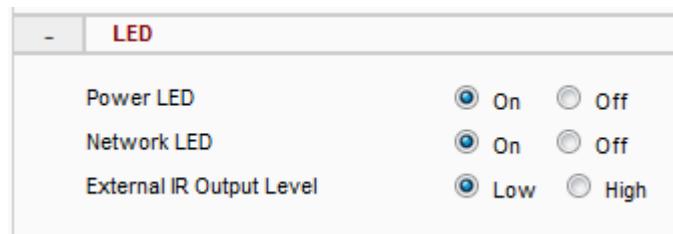
## LED



Power LED	<input checked="" type="radio"/> On <input type="radio"/> Off
Network LED	<input checked="" type="radio"/> On <input type="radio"/> Off

The camera LED lights can be enabled or disabled.

The EV8781 has an additional setting which controls operation of an external IR LED source.



The **External IR Output Level** controls the circuit voltage which is used to turn on/off the external IR LED.

**NOTE:** Refer to the external IR LED manufacturer's recommendation to properly set the **External IR Output Level**.

Low = Active Low: no voltage turns on the external IR LED; voltage turns off the IR LED

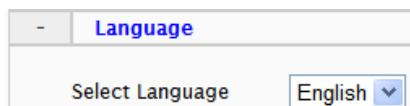
High = Active High: voltage turns on the external IR LED; no voltage turns off the IR LED

## HTTP Port



To use a non-default port, change the HTTP Port value. This port is used by the camera's web server and HTTP streaming.

## Language

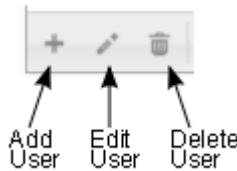


Currently English, Simplified Chinese, Czech, French, German, Russian and Italian are available.

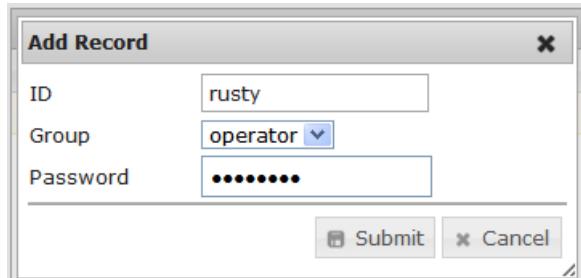
## 3.3 System – User Account Management

User List	
User Name	Group
root	admin
<input type="button" value="+"/>	<input type="button" value="*"/>

User accounts can be added, edited or deleted via the controls in the left corner.



Users are assigned to a group (admin, operator or viewer).



Add Record	
ID	rusty
Group	operator
Password	*****
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

To edit or delete an account, highlight the account in the User List window and click the edit/delete button.

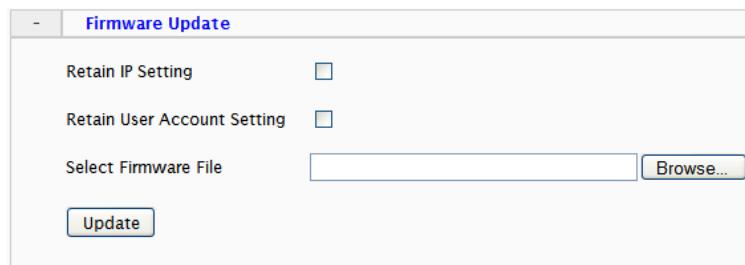
After making changes, click **SAVE** to apply changes.

## 3.4 System – Maintenance

### Firmware Update

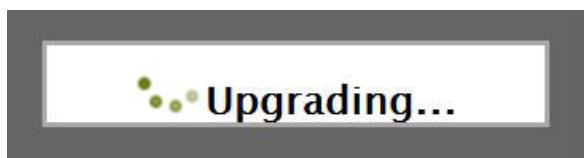
The firmware can be upgraded using the web UI or an SD card. After upgrading, the ActiveX controls and browser cache should be cleaned to prevent old controls & pages from being used.

#### Web UI Firmware Upgrade



Firmware Update	
Retain IP Setting	<input type="checkbox"/>
Retain User Account Setting	<input type="checkbox"/>
Select Firmware File	<input type="text"/> <input type="button" value="Browse..."/>
<input type="button" value="Update"/>	

IP and User Account settings can be preserved by checking the appropriate boxes. After selecting the new firmware file, click **Update** to proceed. Messages that the camera is upgrading and rebooting will follow during the upgrade.



**Rebooting, please wait  
57 secs**

Perform the steps in “Clean the ActiveX and IE Cache & History” below, using EtroScan change the network settings (if applicable), then check the System Information page to verify the upgrade has been completed successfully.

## **Upgrade using SD Card**

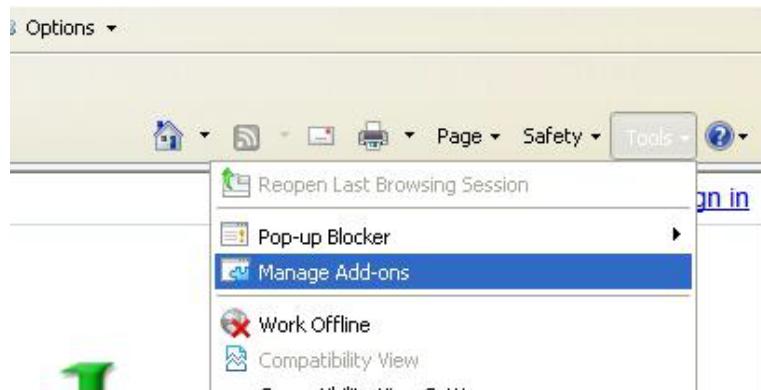
The SD card should be empty of any existing files before proceeding.

1. Rename the firmware file to **ev-fw.bin**, and copy the file to the SD card.
2. Insert the card into the camera’s SD card slot.
3. Power on the camera, and wait about 1 minute.  
The green power LED will flash quickly during the upgrade, become stable briefly and slowly blink while performing a reboot.
4. Check EtroScan to verify the camera is available (IP address may have changed to factory default, 192.168.1.2).
5. Remove the SD card.
6. After web UI access is once again available, review the System Information page to verify the upgrade has completed successfully.

## **Clean the ActiveX and IE Cache & History**

After upgrading, the ActiveX controls and IE cache & history should be cleared to prevent old pages and controls from being used.

Close all instances of IE and open 1 IE window. In the right corner, select **Tools->Manage Add-ons**



In the Manage Add-ons window, select “All add-ons”

Manage Add-ons

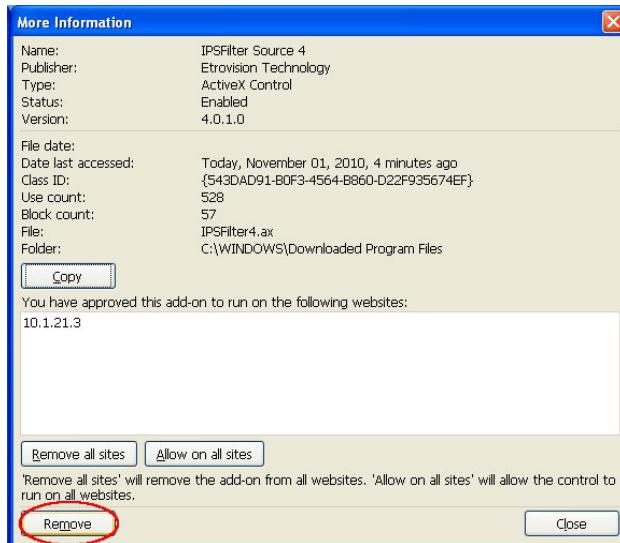
View and manage your Internet Explorer add-ons

Add-on Types	Name	Publisher
Toolbars and Extensions	Not Available	
Search Providers	Discuss	Not Available
Accelerators	Windows Messenger	Not Available
InPrivate Filtering	Research	Not Available
<b>Microsoft Corporation</b>		
	Research	Microsoft Corp
	XML DOM Document	Microsoft Corp
	Windows Media Player	Microsoft Corp
<b>Skype Technologies SA</b>		
	Skype add-on for Internet Ex...	Skype Technolo
	Skype add-on for IE	Skype Technolo
<b>(Not verified) Snippet_ Inc</b>		
Show:		
All add-ons		
All add-ons		
Currently loaded add-ons		
Run without permission		
Downloaded controls		

Scroll down and find Etrovision Technology, highlight one of the ActiveX controls, and click the **More Information** link.

Add-on Types	Name	Publisher	Status	File date	Version
Toolbars and Extensions	(Not verified) Digital Info Technologies				
	IPSFilter Filter	(Not verified) Digital In...	Enabled	5/6/2009 7:42 AM	2.2.1.18
<b>Etvision Technology</b>					
	IPSFilter Source 4	Etvision Technology	Enabled	10/13/2010 10:3...	4.0.1.0
	IPSEventControl Control	Etvision Technology	Enabled	7/2/2010 5:20 PM	1. 0. 0. 7
<b>Adobe Systems Incorporated</b>					
	Shockwave Flash Object	Adobe Systems Incorpor...	Enabled	1/27/2010 8:58 ...	10.0.45.2
<b>Control name is not available</b>					
	IPSFilter Source 3	Control name is not av...	Enabled		
	SendAudioOCX Control	Control name is not av...	Enabled		
<b>IPSFilter Source 4</b>					
Etvision Technology					
Version:	4.0.1.0	Type:	ActiveX Control		
File date:		Search for this add-on via default search provider			
<b>More information</b>					

In the More Information window, click **Remove** to clear the ActiveX control from IE.



Repeat this for the remaining Etrusion Technology ActiveX components.

To clear the cache and browsing history, in the IE menu select **Tools->Internet Options**. Click the **Delete** button in Browsing History.



## Export/Import Camera Configuration

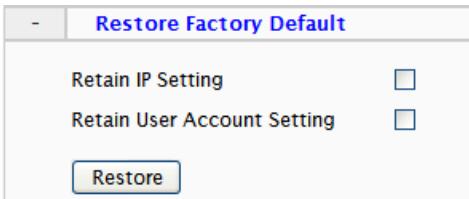


**Export** will save the camera's configuration settings to the PC in an archive file.

To import, first use **Browse** to select a camera's exported configuration file. Next click **Import** to proceed with replacing the current camera settings with the settings in the configuration file.

**NOTE:** Configuration settings can only be imported from a camera of the same model and using the same firmware version. Otherwise, the import will apply the factory default settings.

## Restore Factory Default

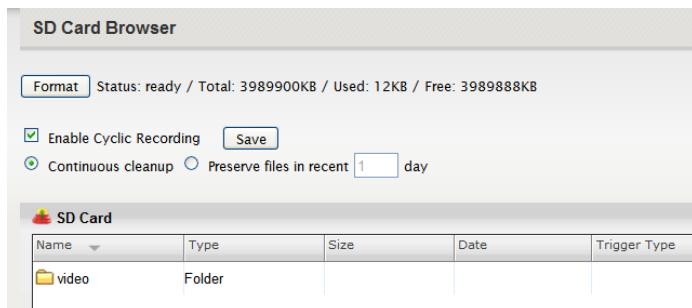


Replaces factory default settings via the web UI. Network and/or user account settings can be saved if the corresponding check boxes are selected.

## Reboot Device

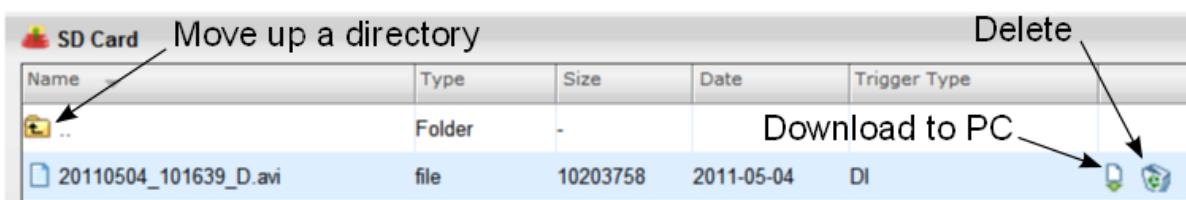


## 3.5 System – Local Storage



Format will format the card. Note: contents of the SD card will be lost.

Double click on folders to go up/down a directory level.



## 3.6 System – Record Setting

There are 2 methods of recording: Event-Triggered and Continuous Recording. Both can be used simultaneously.

## Event-Triggered Recording

Recording Setting	
<b>Event-Triggered Recording</b>	
Enable	<input type="checkbox"/>
Stream Source	1 <input type="button" value="▼"/>
Recording Storage	Network Storage <input type="button" value="▼"/>
Pre-alarm Buffer	4 <input type="button" value="MB"/>
Post-alarm Buffer	4 <input type="button" value="MB"/>

When recording is done via event triggers, Record Setting will define how the recording is performed. Stream Source will only display currently enabled video profile streams.

The pre-alarm and post-alarm buffer are defined in terms of size (MB). The min/max for the settings are based on the stream's resolution & bit rate. So, if the stream source is a small resolution size, then the pre-alarm and post-alarm min/max settings will be less than min/max values for a high resolution stream.

## Continuous Recording

Continuous Recording	
Enable	<input type="checkbox"/>
Stream Source	1 <input type="button" value="▼"/>
Recording Storage	SD Card <input type="button" value="▼"/>
Maximum file size	100 <input type="button" value="MB (10 ~ 300)"/>
Recording Schedule	<input type="checkbox"/>

Currently continuous recording only records to SD card. Checking Recording Schedule will display the scheduling settings which can be used to define when continuous recording should occur.

Recording Schedule	<input checked="" type="checkbox"/>
Day of the Week	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat
Time [HH:MM]	From 00:00 To 23:59 <input type="button" value="Full Day"/>

## 3.7 Network – IP Setting

### IP Setting

Dynamic IP

Static IP

IP Address 192.168.1.2

Subnet Mask 255.255.255.0

Gateway 192.168.1.1

Primary DNS 168.95.1.1

Secondary DNS 168.95.1.1

Save Cancel

In the IP Setting tab, select DHCP or Static IP for the camera. If using static, then enter the appropriate settings for your environment.

Please confirm all network related settings with the network administrator prior to making any changes.

### WLAN Setting

Currently only the EV8180 model has wireless functionality, and only wireless dongle from Etrlevision is supported. Other manufacturers' wireless dongles are not guaranteed to work.

The EV8x8x models use a wireless dongle which is different from the EVxx5x models. Verify the appropriate wireless dongle (e.g. AC-WD3110, AC-WD3111) is being used.

In the WLAN setting tab, click the Enable Wi-Fi option to enable WiFi.

Enable Wi-Fi

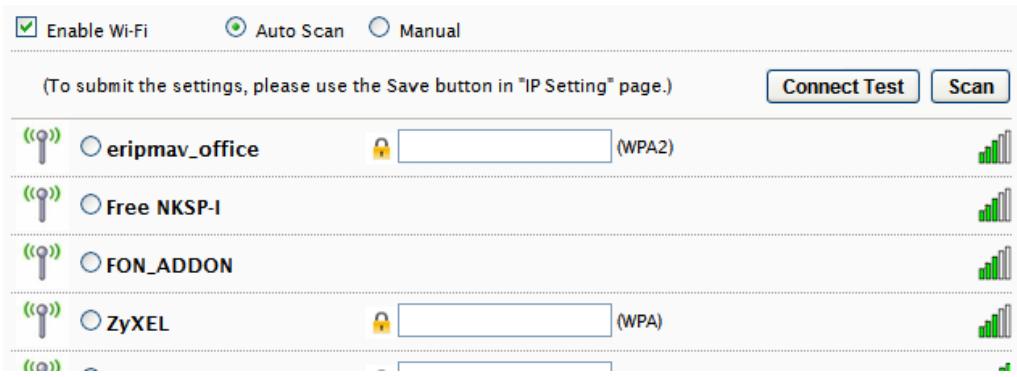
Auto Scan

Manual

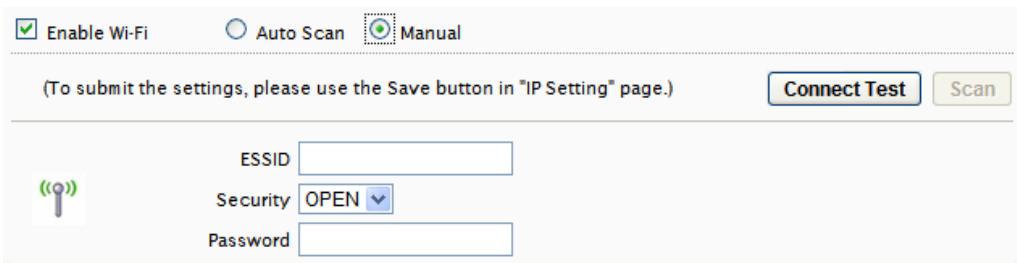
Any WiFi changes will only be applied after clicking the **Save** button in the IP Setting tab.

**(To submit the settings, please use the Save button in "IP Setting" page.)**

Auto Scan can be used to scan available networks. An available network can be selected by clicking the option and entering a password if required.



Manual can be used to directly configure WiFi settings.

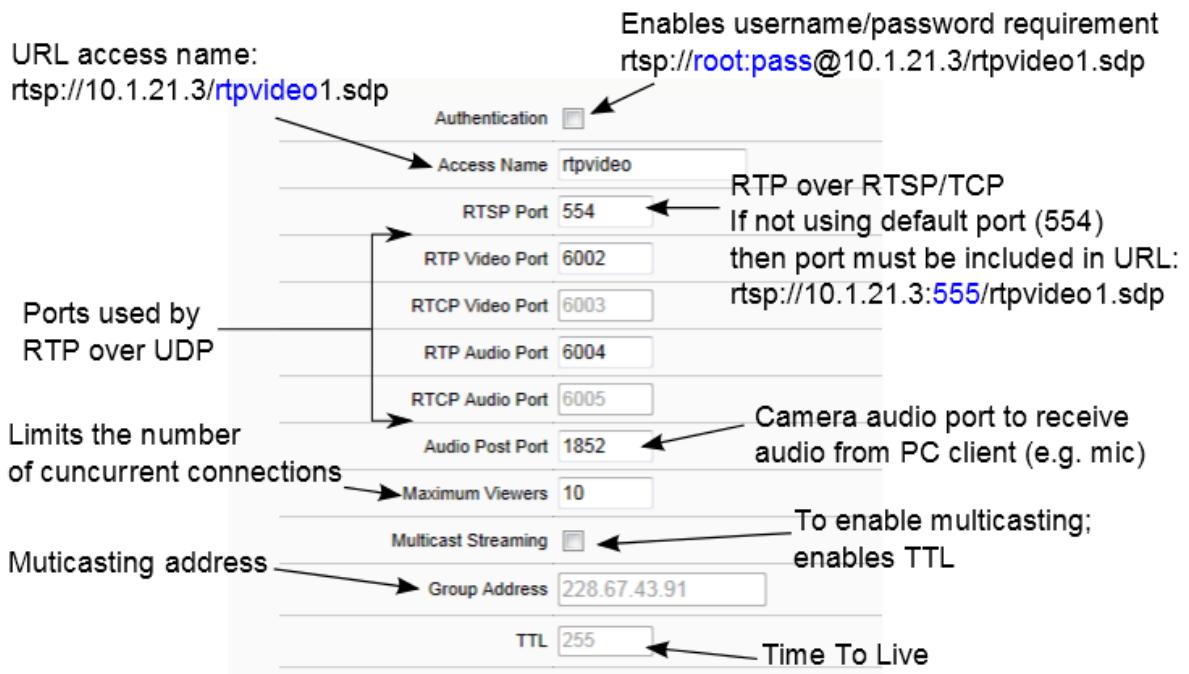


In the IP Setting tab, set the appropriate IP settings for the wireless network. After clicking **Save**, the camera will reboot with the new wireless settings.

The camera will no longer be accessible via the wired network. Disabling WiFi or removing the WiFi USB antennae will enable the wired network port.

## 3.8 Network – Streaming

The camera can stream using UDP, TCP or HTTP. The client application connecting to a camera can direct which protocol to use. The method of streaming will likely determine the need and extent of any router configuration that may be required.



The port settings all relate to camera ports. If streaming outside of a LAN (e.g. to the internet), then routers on both the camera and client side need to provide necessary access for these ports.

The camera will stream via HTTP by default, which will use the HTTP port as defined in the System – Generic Settings (80 by default). Streaming via HTTP often requires little or no router configuration.

HTTP Port

80

If the client application uses RTP over RTSP/TCP, then the camera will stream using the **RTSP Port**, 554 by default.

RTP over UDP will stream using the **RTP Video Port**, starting at 6002 and can increment.

Video and audio server ports only need be changed if a network has security or operational restrictions using these ports. In most cases, the RTP/RTCP video and audio should use the default values.

While the RTP/RTCP audio/video ports by default are 6002-6005, this represents the starting point for client connections. If 1 client is connected, then this connection would use 6002-6005, but a 2<sup>nd</sup> connection would then use 6006-6009. This may require proper router configuration if using the web UI outside of a LAN.

**Maximum Viewers** refers to concurrent uses. Connections beyond this value will receive an error upon connection.

**Multicasting** allows sending a message or data to a group via a single message. The multicasting parameters are only for configuring a camera to use

multicasting. A networking environment that supports multicasting must be setup which is beyond the scope of this document.

## 3.9 Network – DDNS

DDNS is used to map a dynamically assigned IP address (a device using DHCP) with a hostname.

**NOTE:** Certain network configuration will likely be required (i.e. mapping the IP address recognized by the DDNS service to the IP camera) to implement DDNS. Therefore, the network administrator will likely need to be consulted.

<input checked="" type="checkbox"/>	Enable DDNS
Service Provider	dyndns.org
Host Name	ddnsuser
User Name	ddnsuser
Password	*****
Update Interval (min)	30

If the IP camera uses DHCP, a DDNS service can provide a hostname for use with the IP camera.

Registration with one of the DDNS service providers (ddns.nu, dyndns.org) is required for use of this feature.

## 3.10 Video/Audio – Video Setting

<b>Video Setting</b>	
Power Frequency	<input checked="" type="radio"/> 60Hz <input type="radio"/> 50Hz
Max. Resolution	<input type="radio"/> 5MP <input type="radio"/> 3MP <input checked="" type="radio"/> 1080p <input type="radio"/> Minilux(720p)
<input type="checkbox"/> Enable TV output	<input type="radio"/> SDTV <input checked="" type="radio"/> HDTV
<input type="checkbox"/> Show time stamp and camera name on video	
<b>Profile Mode</b>	
<input checked="" type="radio"/> 1 Profile <input type="radio"/> 2 Profile <input type="radio"/> 4 Profile	
<b>Quality Setting</b>	
▶ Profile 1	

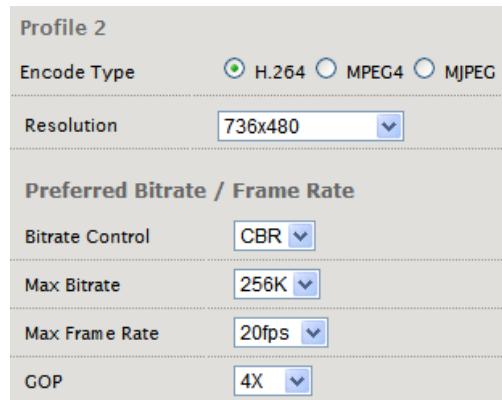
Deflicker can be adjusted if flickering is present due to artificial lighting. This setting should be set to match the utility frequency for a given country.

## TV Output

TV Output can be enabled with SDTV or HDTV options available.

- SDTV = CVBS output
- HDTV = YPbPr output

When **TV Output** has been enabled, 2 video profiles will be enabled. Profile 2 will change to settings which will be used for the video out display (e.g. D1 resolution).



Profile 1 settings will not be modified.

## Resolution Mode (EV8x80F Models Only)

For the F model series, Resolution Mode provides a variety of resolution formats.

Resolution Mode  5M  3M  Full HD(1080p)  Minilux(720p)

**5M** will change Stream 1 to 5M (2592x1920) with a maximum 10fps for both Stream 1 and 2.

The 5M option limits ROI to 2, and recording via the camera (e.g. SD card) is disabled.

Minilux mode uses noise cancelation technology to provide clearer image quality in low lux conditions.

## Time Stamp & Camera Name

When enabled:

Show time stamp and camera name on video

The video will also display the time stamp and camera name.



## Profile Setting

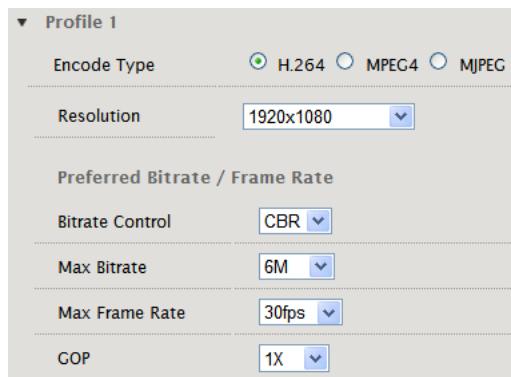
The Video Profile Settings control the ROI (Region of Interest) characteristics. The ROI video is streamed via RTSP protocol. See the "Streaming ROI" section for more on viewing ROI video.

The number of available ROI profiles for viewing can be set by selecting the appropriate option button.



**4 Profile** defines each stream with a VGA resolution (640x480), while **1 Profile** and **2 Profile** settings provide some options for resolution.

Setting for specific ROI profiles can be found in the Video Quality Setting section.

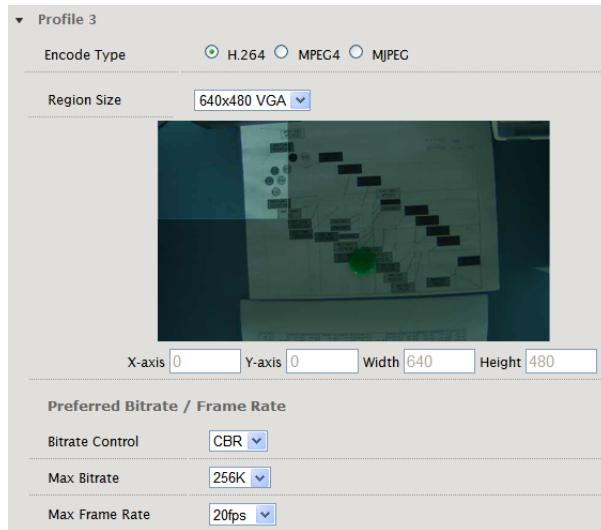


ROI profile 1 & 2 are preconfigured profiles which have some settings that are configurable (e.g. FPS).

All profiles offer Constant Bit Rate (CBR) or Variable Bit Rate (VBR) mode.

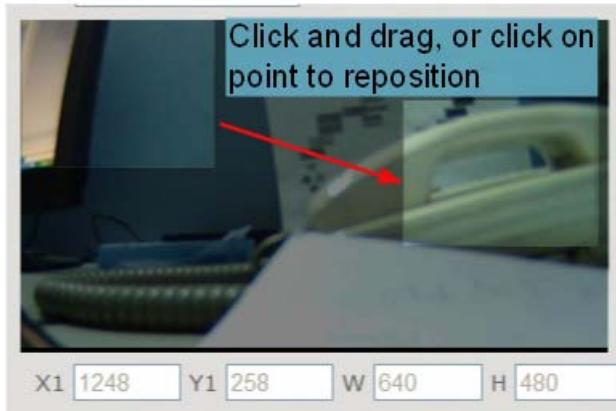
The GOP (Group Of Pictures) can also be adjusted. The GOP is based on the FPS setting. For example, if the FPS is 20 and the GOP setting is 2, then the GOP is 40 frames. A GOP is comprised of one I frame and the remainder are P frames.

**4 Profile** defines each stream with a VGA resolution (640x480).



In the Region Size settings, the image has a mask covering area that will not be displayed; the lighter shaded area will be what is displayed for the ROI.

To adjust the ROI, click & drag the window or click within the masked area to reposition.



### 3.11 Video/Audio – Audio Setting

Encode Type	G.711 u-law
Bitrate	128
Line-In Gain	6
Line-Out Gain	6

Select the desired audio codec. The **Bitrate** is configurable for some codecs.

## 3.12 Video/Audio – Color Setting

### Day/Night Setting

Day & Night setting configuration options are available.

Day/Night Setting

IR-Cut Filter: Auto Mode (Light sensor)

B/W in night mode:

- IR-Cut Filter: controls IR filter operation
- B/W in night mode: deselect if black & white not desired in night mode

### IR-Cut Filter

The IR-Cut Filter has a several settings, and most are self explanatory.

The Auto Mode (AE) allows adjusting the light sensor's sensitivity to day/night conditions to fine tune the IR cut filter operation when the Auto Mode (Light Sensor) isn't optimal for a specific environment.

Day/Night Setting

IR-Cut Filter: Auto Mode (AE)

Transfer Threshold: From Day to Night: 0 (Normal) back to Day: +2

Luminance metering: 7.51

In Transfer Threshold are 2 settings: **From Day to Night** and **Back to Day**.

**From Day to Night** has a range (+10 Bright to -10 Dark) which can be used to adjust the sensitivity of switching from day to night. A larger **From Day to Night** value will result in a switching to Night mode in lighter conditions, a lower value requires darker conditions to switch.

**Back to Day** also provides a range (+2-+12) which adjusts the sensitivity of the switch from night to day. This value relates to the **From Day to Night**; the switch to day mode is based on the **From Day to Night + Back to Day** values.

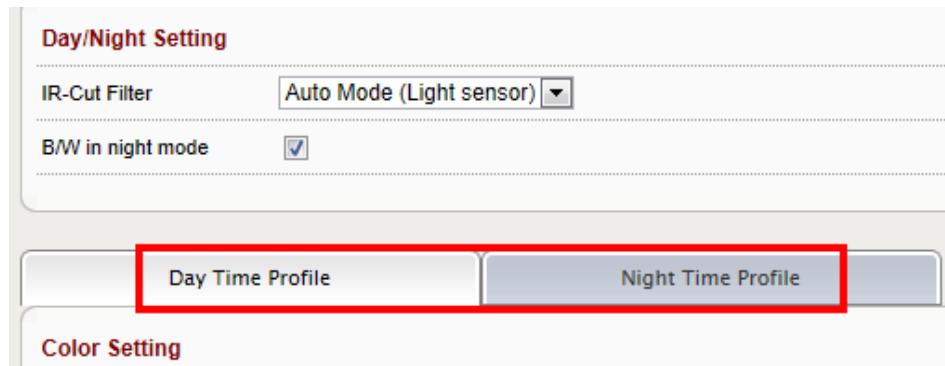
**NOTE:** **Auto Mode (AE)** doesn't differentiate between IR light and visible light. Subsequently, IR light can cause the IR-Cut filter to switch back to Day mode.

While in night mode, if an object is close the image will appear bright from the IR light and result in the **Luminance Metering** to register a high value which can switch the camera back to Day mode. This is due to **Auto Mode (AE)** using image brightness.

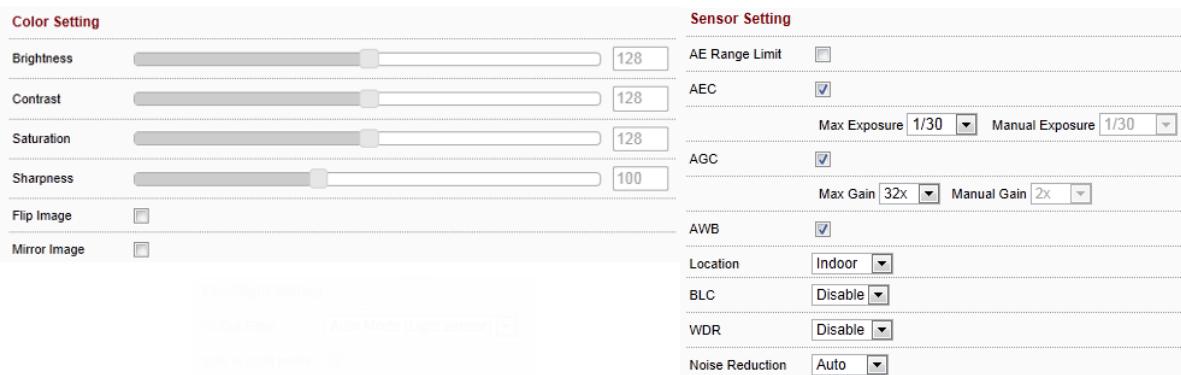
So, the camera shouldn't use this setting in environments where objects are close creating a "bright" image. Alternatively, set the **Back to Day** to a high value to counteract this behavior.

## Color & Sensor Settings

Image settings for both day and night are available via the Day & Night Time Profile tabs. The relevant settings will be applied to the camera based on the camera's present mode of operation (e.g. day or night).



Color and sensor settings are as follows:



- Brightness
- Contrast
- Saturation
- Sharpness
- Flip: flip horizontally (top to bottom)
- Mirror: flip vertically (right to left)
- AE Range Limit: enables an upper/lower limit list of exposure values for configuration  
Enabling also disables AEC & AGC settings and hides the setting controls
- AEC: Automatic Exposure Control; disabling enables Manual Exposure  
Max Exposure: maximum possible exposure time  
Manual Exposure: sets specific exposure time
- AGC: Automatic Gain Control; disabling enables Manual Gain  
Max Gain: maximum possible gain  
Manual Gain: sets specific gain setting
- AWB: Auto White Balance
- Location: indoor/outdoor setting to provide more accurate exposure for an indoor or outdoor environment

- BLC: Back Light Compensation; image EV (Exposure Value) can be increased to compensate for background lighting
- WDR: Wide Dynamic Range; used for high contrast lighting; some camera models only have Medium and High setting
- Noise Reduction: image noise compensation; manual allows user to define level of noise reduction (0 none; 255 max). While noise reduction will smooth pixilation (usually in dark areas), too much may result in blurring.

## 3.13 Video/Audio – Text Overlay

Timestamp Format

Attach camera name to the caption

The video display format can be changed by selecting one of the available timestamp formats and enabling display of the camera name.

## 3.14 Video/Audio – Privacy Mask

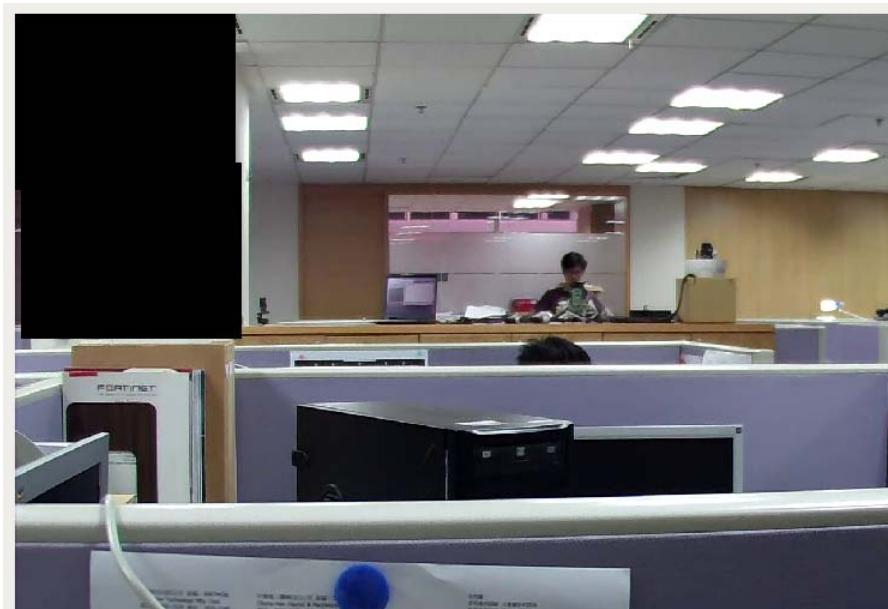
Privacy mask can be used to block out areas from view and triggering motion detection. Up to 5 privacy masks can be applied; each mask can be 80 x 45 in size.

Color of Mask

<input checked="" type="checkbox"/> Mask Window 1	<input type="radio"/> Draw	X <input type="text" value="0"/>	Y <input type="text" value="0"/>	W <input type="text" value="80"/>	H <input type="text" value="45"/>
<input checked="" type="checkbox"/> Mask Window 2	<input checked="" type="radio"/> Draw	X <input type="text" value="2"/>	Y <input type="text" value="38"/>	W <input type="text" value="80"/>	H <input type="text" value="45"/>
<input type="checkbox"/> Mask Window 3	<input type="radio"/> Draw	X <input type="text" value="63"/>	Y <input type="text" value="0"/>	W <input type="text" value="80"/>	H <input type="text" value="45"/>
<input type="checkbox"/> Mask Window 4	<input type="radio"/> Draw	X <input type="text" value="70"/>	Y <input type="text" value="39"/>	W <input type="text" value="80"/>	H <input type="text" value="45"/>
<input type="checkbox"/> Mask Window 5	<input type="radio"/> Draw	X <input type="text" value="0"/>	Y <input type="text" value="0"/>	W <input type="text" value="0"/>	H <input type="text" value="0"/>

Check the box to the left to enable, then click **Draw** to set the mask area. The area handles can be used to adjust the size or move the mouse over the area and click/drag to move the mask.

The masked area will be blocked from the image (and motion detection) with the color set in **Color of Mask** (black by default).



### 3.15 Event Handle – Event Rule

The Event Rule page is used to define actions (e.g. record to SD card) in response to the triggering of an event (e.g. motion detection).

Rule List
<input type="button" value="Add"/> <input type="button" value="Update"/> <input type="button" value="Delete"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>

The Add/Update rule screens contain the same fields.

**Rule Name** is a user defined name for a user defined trigger/action. A trigger or action may require additional settings (e.g. motion detection area).

Rule Name	<input type="text"/>				
Trigger Type	<input checked="" type="checkbox"/> Motion Detection <input type="checkbox"/> Digital Input <input type="checkbox"/> Network Loss <input type="checkbox"/> Periodical Timer				
Detect Area	<input type="checkbox"/> Area 1 <input type="checkbox"/> Area 2 <input checked="" type="checkbox"/> Area 3				
Period Time	<input type="text"/> 1 secs				
Action	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Digital Output</td> <td><input type="checkbox"/> Email</td> </tr> <tr> <td><input type="checkbox"/> Record</td> <td><b>[Email Setting]</b> Recipient email address: jd@abc.com</td> </tr> </table>	<input checked="" type="checkbox"/> Digital Output	<input type="checkbox"/> Email	<input type="checkbox"/> Record	<b>[Email Setting]</b> Recipient email address: jd@abc.com
<input checked="" type="checkbox"/> Digital Output	<input type="checkbox"/> Email				
<input type="checkbox"/> Record	<b>[Email Setting]</b> Recipient email address: jd@abc.com				

**Period Time** is a time interval during which an event can not be triggered. For example, if **Period Time** is set to 60, then after a specific event is triggered (e.g. motion detection), that event can only be triggered after 60 seconds.

This applies only to a user-defined event. If 2 motion detection events have been configured (e.g. MD1 and MD2), then if MD1 is triggered, MD2 can still be triggered regardless of MD1's Period Time setting.

Be sure to click **SAVE** in the main Event Rule screen to save any changes.

## 3.16 Event Handle – Event Server

The Event Server page has configuration options for event notification via email and event driven video/images to network storage.

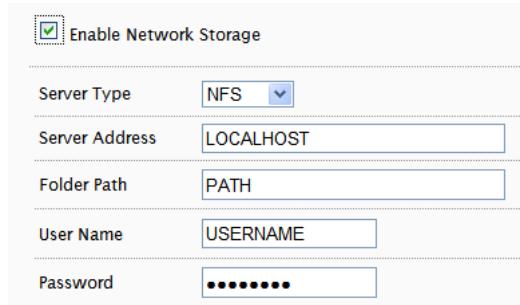
### Email Setting

<input checked="" type="checkbox"/> Primary Email Server	
Server Address	<input type="text"/> smtp.mymail.com
Server Port	<input type="text"/> 25
Require Authentication	<input type="checkbox"/>
User name	<input type="text"/> username
Password	<input type="password"/> ••••••••
Sender email address	<input type="text"/> user@smtp.mymail.com
Recipient email address	<input type="text"/> user@smtp.mymail.com
Connection Timeout (sec)	<input type="text"/> 5
require SSL connection	<input type="checkbox"/>

Enter the SMTP server for Server Address and all additional relevant details.

The username may only contain alphanumeric characters and the underscore character, “\_”.

## Network Storage



Enable Network Storage

Server Type: NFS

Server Address: LOCALHOST

Folder Path: PATH

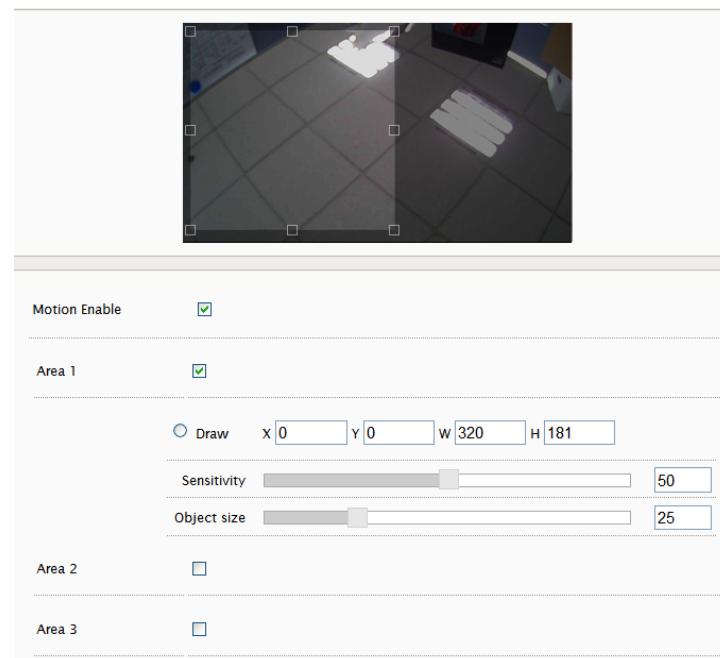
User Name: USERNAME

Password: \*\*\*\*\*

NFS and Samba are supported; if enabled then input relevant details.

## 3.17 Event Handle – Motion Detection

To use motion detection, motion detection should be enabled and at least one motion detection area enabled. Checking the box for an Area (e.g. Area 1) enables it.



Motion Enable:

Area 1:

Draw: x: 0, y: 0, w: 320, h: 181

Sensitivity: 50

Object size: 25

Area 2:

Area 3:

To modify a Detect Area, select “Draw” and click & drag to resize the detection area (light area) . X=horizontal, Y=vertical, W=width, H=height.

## 3.18 PTZ Control – Serial Setting

PTZ settings can be applied if the camera will interact with a PTZ device.

PTZ Protocol	none
Device ID	1
Baud Rate	9600
Data Bits	8
Parity Bit	none
Stop Bits	1
Communication Mode	RS485

Pelco P and D and transparent protocols are supported as well as RS-485 and RS-422 communication modes.

Please refer to the PTZ device's required settings to configure the web UI PTZ settings.

## 3.19 System Log – View Log

The System Log displays system and event details.

System Log	Event Log
<pre> Jan 1 00:00:12 syslogd 1.5.2: restart (remote reception). Jan 1 00:00:14 ips_sysmgr[700]: v0.2.0 (Fri Apr 15 18:16:30 CST 2011) executable binary Jan 1 00:00:14 ips_sysmgr[700]: service &lt;0:svConfigMngr&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;1:svEvtListen&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;2:svRomHost&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: success to connect the Event Handler. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;3:svAudioSrc&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;4:svDdnsClient&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;5:svEventInput&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: service &lt;6:svLedCtrl&gt; created successfully. Jan 1 00:00:14 ips_sysmgr[700]: switching audio input to mic-in. Jan 1 00:00:14 ips_sysmgr[700]: setup the LEDs state. Jan 1 00:00:14 ips_sysmgr[700]: Setting event input successfully </pre>	

The System Log has information specifically related to basic system messages (e.g. startup, shutdown) while the Event Log contains information related to events triggered.

## 3.20 System Log – Remote Log Setting

The System and/or Event log data can also be remotely logged. Check the box to enable and provide the corresponding log server address.

System Log	<input type="checkbox"/> Enable	Server IP address	192.168.0.2
Event Log	<input type="checkbox"/> Enable	Server IP address	192.168.0.2

## 4 STREAMING VIDEO

### 4.1 RTSP Streaming

Video can be streamed to a video player (e.g. VLC) via RTSP protocol using the standard RTSP port number 554.

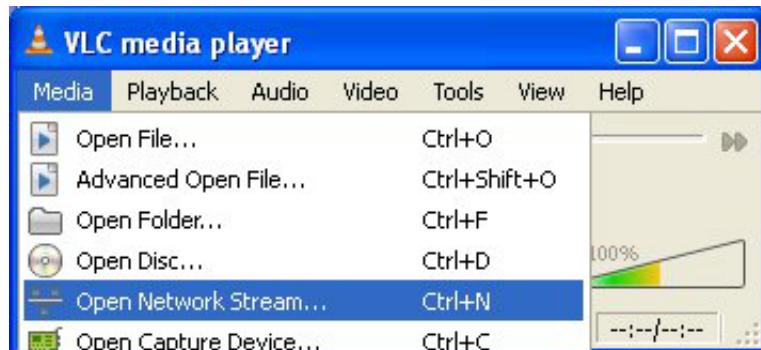
The URL is in the following format:

`rtsp://[IP ADDRESS]/rtpvideo[1-4].sdp`

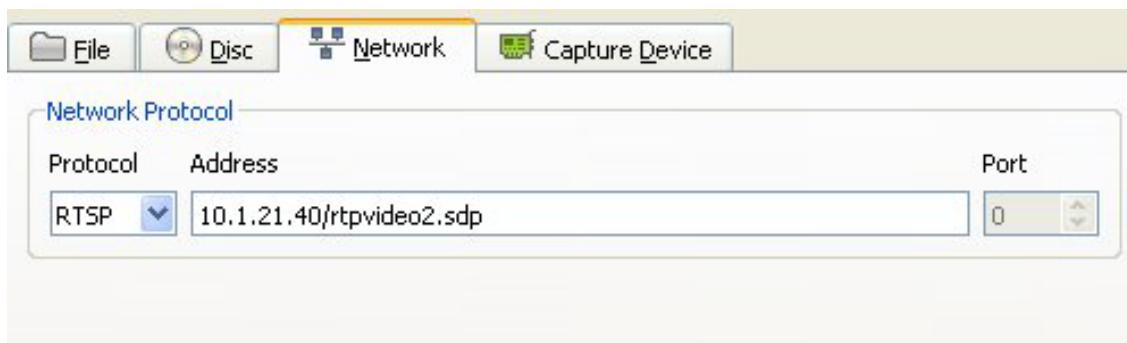
Replace with the appropriate IP address.

`rtpvideo1-4` represent video profiles with different characteristics. For more information on video profiles, see *Video/Audio - Video Setting*.

Using VLC for example, select **Media** from the menu bar and **Open Network Stream**.



Next specify IP address of the camera and stream profile.



Click **Play** and video will begin streaming in the video player.

**WARNING:** firewalls and other network security may prevent video streaming.

### Authentication

If Streaming authentication has been enabled in Network -> Streaming

Then a username/password must be supplied with the RTSP URL

`rtsp://USERNAME:PASSWORD@[IP ADDRESS]/rtpvideo[1-4].sdp`

Network Protocol

Please enter a network URL:

## 4.2 Image Snapshot in a Browser

To view an image snapshot in a browser, the jpeg.cgi call will provide a snapshot based on video profile 1.

`http://<IP ADDRESS>/config/jpeg.cgi`

## 5 ROUTER/FIREWALL CONFIGURATION

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**NOTE:** Router/Firewall functionality and operation depends on the make/model, firmware, etc. The following screen shots related to router/firewall configuration are only for reference; functionality and operation may differ from your equipment. Please refer to your router/firewall documentation for additional information on functionality and operation.

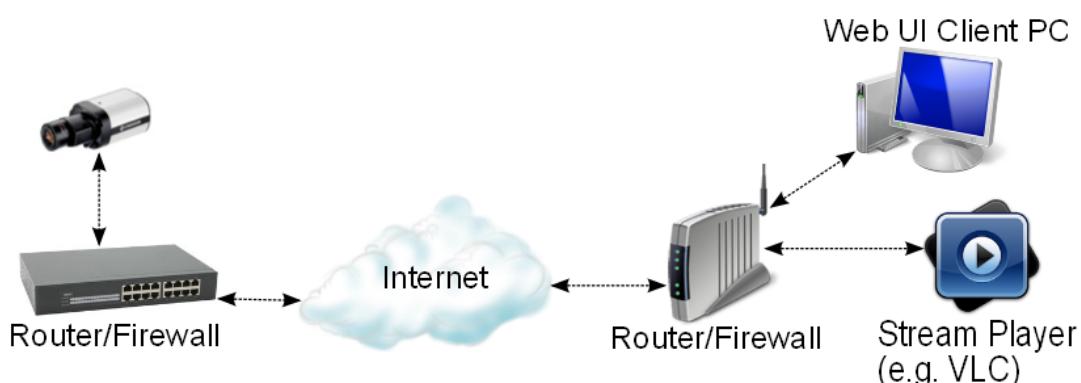
The following assumes the use of the camera's default Network/Streaming settings. If any changes were made to the default settings (e.g. RTSP Port), then please account for these in the router/firewall configuration.

For more information on the streaming port settings, refer to section **3.8 Network - Streaming** and **3.2 System - Generic Setting** for the HTTP port.

<input checked="" type="checkbox"/> Authentication	
Access Name <input type="text" value="rtpvideo"/>	
RTSP Port <input type="text" value="554"/>	
RTP Video Port <input type="text" value="6002"/>	
RTCP Video Port <input type="text" value="6003"/>	
RTP Audio Port <input type="text" value="6004"/>	
RTCP Audio Port <input type="text" value="6005"/>	
Audio Post Port <input type="text" value="1852"/>	
Maximum Viewers <input type="text" value="10"/>	
<input type="checkbox"/> Multicast Streaming	
Group Address <input type="text" value="228.67.43.91"/>	
TTL <input type="text" value="255"/>	

### 5.1 Streaming Router Configuration

If a PC will access the web UI or stream camera video from the WAN/Internet, then additional configuration is required on the client router/firewall.



# Camera Router/Firewall

The camera's router/firewall may require opening (assuming default camera settings). The following highlights those ports that require configuration for a specific streaming method.

## Clients only requiring streaming via HTTP

- Web port 80/TCP – Also required if camera web UI access needed

## Clients only streaming RTP over RTSP/TCP

- RTSP port 554/TCP

## Clients only streaming using RTP over UDP

- RTSP ports 6000+ (port usage starts in low 6000 and depends on number of connections – 6000-7000 could be specified)

Sample router screenshots enabling port 80 and 554 for streaming. This would be used if clients stream either via HTTP or RTP over RTSP/TCP.

NAT >> Port Redirection

Port Redirection					<a href="#">Set to Factory Default</a>
Index	Service Name	Public Port	Private IP	Status	
1.	camera RTP port 554	554	192.168.1.10	v	
2.	camera web port 80	80	192.168.1.10	v	
3.				x	

Index No. 2

<input checked="" type="checkbox"/> Enable	
Mode	Single <input type="button" value="▼"/>
Service Name	camera web port 80
Protocol	TCP <input type="button" value="▼"/>
WAN IP	All <input type="button" value="▼"/>
Public Port	80
Private IP	192.168.1.10
Private Port	80

NAT >> Port Redirection

Index No. 1

<input checked="" type="checkbox"/> Enable	
Mode	Single <input type="button" value="▼"/>
Service Name	camera RTP port 554
Protocol	TCP <input type="button" value="▼"/>
WAN IP	All <input type="button" value="▼"/>
Public Port	554
Private IP	192.168.1.10
Private Port	554

The firewall/DoS settings may also require some modification. The following shows a change made to facilitate streaming.

Firewall >> General Setup

General Setup		
Call Filter	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Start Filter Set <input type="button" value="Set#1"/>
Data Filter	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Start Filter Set <input type="button" value="Set#2"/>
Actions for default rule:		
Application Filter	Action/Profile <input type="button" value="Pass"/>	Syslog <input type="checkbox"/>
IM/P2P Filter	Action/Profile <input type="button" value="None"/>	Syslog <input type="checkbox"/>
<input type="checkbox"/> Apply IP filter to VPN incoming packets <input checked="" type="checkbox"/> Accept large incoming fragmented UDP or ICMP packets ( for some games, ex. CS )		

## Client Router/Firewall

A client PC or application may require router configuration as well. Although this usually isn't required for HTTP or RTP over TCP, this will often be required when streaming via UDP.

There are 2 ways to handle this situation:

- Place the PC in the DMZ
- Open UDP traffic for port 1-65535

### DMZ

An example of the DMZ host setup.

NAT >> DMZ Host Setup

DMZ Host Setup		
WAN 1		
Private IP	192.168.1.20	Choose PC
Private IP	<input type="button" value="Choose PC"/>	
MAC Address of the True IP DMZ Host	<input type="button" value="Choose PC"/>	
Note: When a True-IP DMZ host is turned on, it will force the router's WAN connection to be always on.		
WAN 2		
Enable	Private IP	Choose PC
<input type="checkbox"/>	<input type="button" value="Choose PC"/>	<input type="button" value="Choose PC"/>

### Open UDP Port

Opening ports 1-65535 allows full web UI access.

## NAT >> Open Ports

Open Ports Setup					<a href="#">Set to Factory Default</a>
Index	Comment	WAN Interface	Local IP Address	Status	
1.	client UDP port setting	WAN1	192.168.1.9	V	

## NAT >> Open Ports >> Edit Open Ports

### Index No. 1

<input checked="" type="checkbox"/> Enable Open Ports	Comment	client UDP port setting					
	WAN Interface	WAN1					
	Local Computer	192.168.1.9 <input type="button" value="Choose PC"/>					
1.	Protocol	Start Port	End Port	Protocol	Start Port	End Port	
1.	UDP	1	65535	6.	---	0	0
2.	---	0	0	7.	---	0	0

## Firewall/Security Settings

The router firewall/security settings may need adjusting to permit access. PC firewall or virus scan software may also affect streaming.

Below is an example of DoS settings; note some access is provided for permitting access.

## Firewall >> DoS defense Setup

### DoS defense Setup

<input checked="" type="checkbox"/> Enable DoS Defense <input type="button" value="Select All"/>	Threshold	50	packets / sec
<input checked="" type="checkbox"/> Enable SYN flood defense	Timeout	10	sec
<input type="checkbox"/> Enable UDP flood defense	Threshold	150	packets / sec
	Timeout	10	sec
<input checked="" type="checkbox"/> Enable ICMP flood defense	Threshold	50	packets / sec
	Timeout	10	sec
<input type="checkbox"/> Enable Port Scan detection	Threshold	150	packets / sec
<input checked="" type="checkbox"/> Block IP options	<input checked="" type="checkbox"/> Block TCP flag scan		
<input checked="" type="checkbox"/> Block Land	<input checked="" type="checkbox"/> Block Tear Drop		
<input checked="" type="checkbox"/> Block Smurf	<input checked="" type="checkbox"/> Block Ping of Death		
<input checked="" type="checkbox"/> Block trace route	<input checked="" type="checkbox"/> Block ICMP fragment		
<input checked="" type="checkbox"/> Block SYN fragment	<input type="checkbox"/> Block UnknownProtocol		
<input checked="" type="checkbox"/> Block Fraggle Attack			

## 6 MOTION JPEG IN A BROWSER

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Basic streaming from the camera to a browser can be done using the mjpg.cgi call.

Microsoft IE is not support for this function. IE doesn't support the server-push implementation, so Firefox is recommended for use with mjpg.cgi. Other browsers (e.g. Chrome) may also work.

First, configure the target video stream profile to use MJPEG encoding type. If multiple video profiles use MJPEG, then the **profile** parameter should also be included; this is discussed below.



In the browser enter the mjpg.cgi call. Substitute the camera IP/URL for <IP ADDRESS>:

`http://<IP ADDRESS>/stream/mjpg.cgi`

The user will be challenged for a username and password; this is required and can't be disabled.

The username/password can be included with the URL avoiding the username/password pop-up window. Use the following format (substitute root:pass with appropriate username:password):

`http://root:pass@<IP ADDRESS>/stream/mjpg.cgi`

If multiple profiles are using MJPEG codec, then the **profile=n** parameter should be included to specify which video stream profile to use. Substitute the stream profile number (e.g. profile=2 for camera video profile 2) for n:

`http://<IP ADDRESS>/stream/mjpg.cgi?profile=n`

## 7 EV8280 PTZ CONTROL SETTINGS

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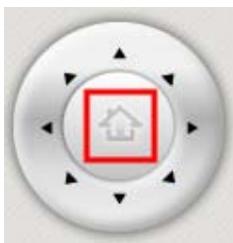
The EV8280 is a speed dome camera with built-in PTZ functionality. The PTZ Control settings in the EV8280 cater to the specific functionality available in this model.

### 7.1 PTZ Control – General Setting

<b>Home Function</b>	
Assign Home as action	Disable
<input type="checkbox"/> Resume to Home action after idle for	120 secs
<b>Zoom Setting</b>	
<input checked="" type="radio"/> Optical Zoom Only	
<input type="radio"/> Digital and Optical Zoom	

#### Home Function

Home Function can define a PTZ function to be executed when the Home button in the Live View's PTZ Control panel is clicked.



**Patrol, Auto Scan and Go Preset Point** can all be configured to start upon clicking the Home button.

In addition, the defined Home Function can also be configured to run automatically if no user interaction has occurred for a specified amount of time. To enable click the check box and change the idle time if desired.

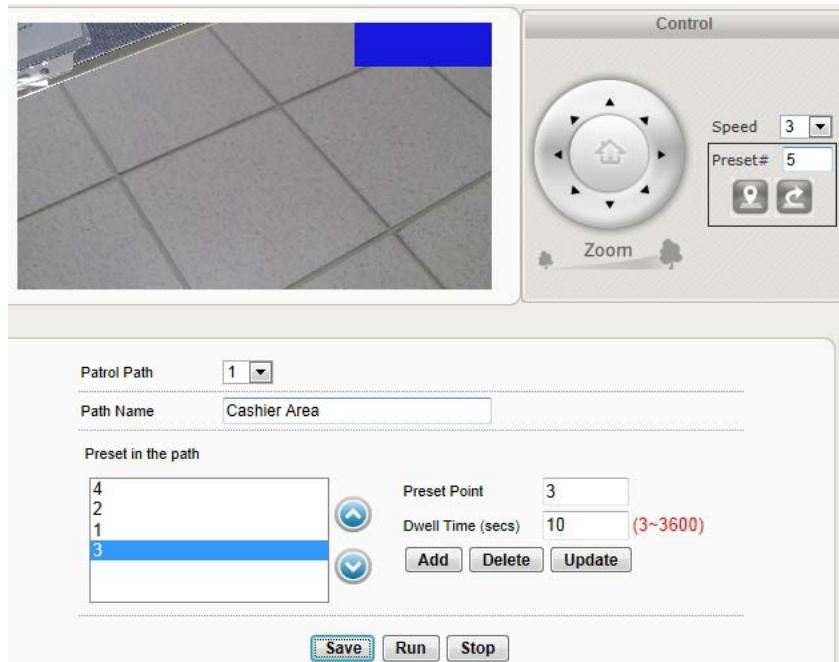
Assign Home as action	Patrol	Patrol Path	1
<input checked="" type="checkbox"/> Resume to Home action after idle for	240	secs	

#### Zoom Setting

Currently only the Optical Zoom Only option is available.

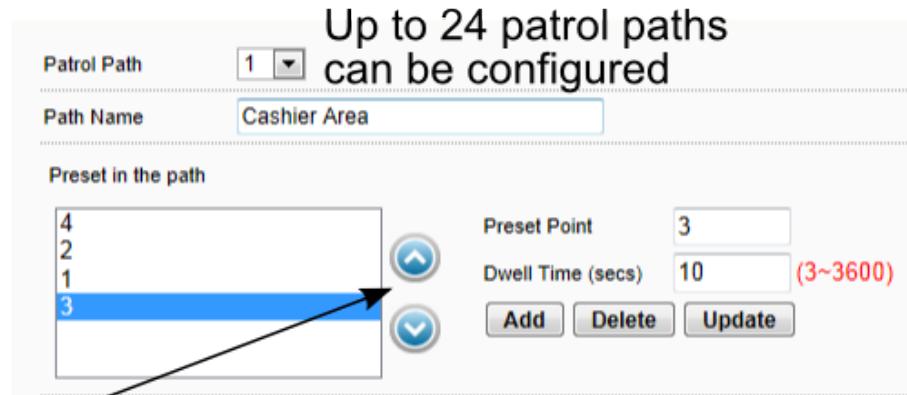
## 7.2 PTZ Control – Patrol Setting

Patrol can be used to automatically move from point to point. Up to 24 patrol paths can be configured.



A preview window and PTZ Control panel are present in the top portion of the page. The PTZ Control panel has the same functionality as in the Live View.





Use to change the sequence of presets

**Save** **Run** **Stop**

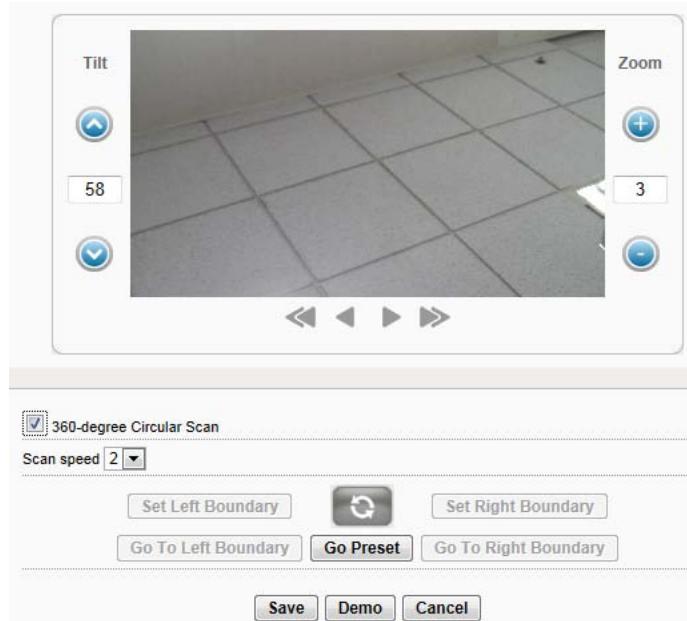
Use Run & Stop to view in the Patrol Setting viewing window

A patrol path is comprised of several preset points. Enter a predefined preset point and the dwell time (duration at the specified point), then click **Add**.

To **Delete** or **Update** a preset point, first highlight the preset point in the **Preset in the path** pane.

## 7.3 PTZ Control – Auto Scan Setting

Auto Scan will pan along an axis. The scan can rotate 360° or pan between 2 points.





The top of the page includes a preview window as well as **Tilt** and **Zoom** controls. The arrows at the bottom of the preview window can be used for viewing or setting left/right boundaries.



If the **360-degree Circular Scan** is checked, then the remaining settings related to the boundary scan will be disabled. **Scan speed** can be adjusted as needed.

To configure the angle scan, move the camera to the desired left/right boundary. This can be done using the directional arrows in the preview window or using the **Go Preset** button for a predefined point. Click the **Set Left/Right Boundary** button to define the left/right boundary.

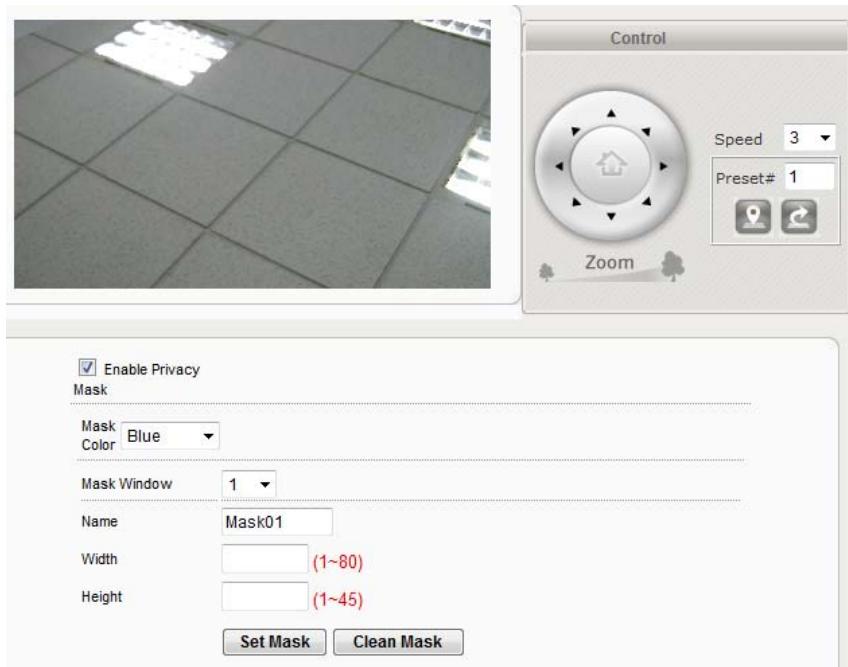
The **Go to Left/Right Boundary** will move the camera to the left/right boundary if defined.

The  button will swap the left & right boundary. The left boundary becomes the right boundary, and vice versa.

The **Run** button can be used to preview the Auto Scan.

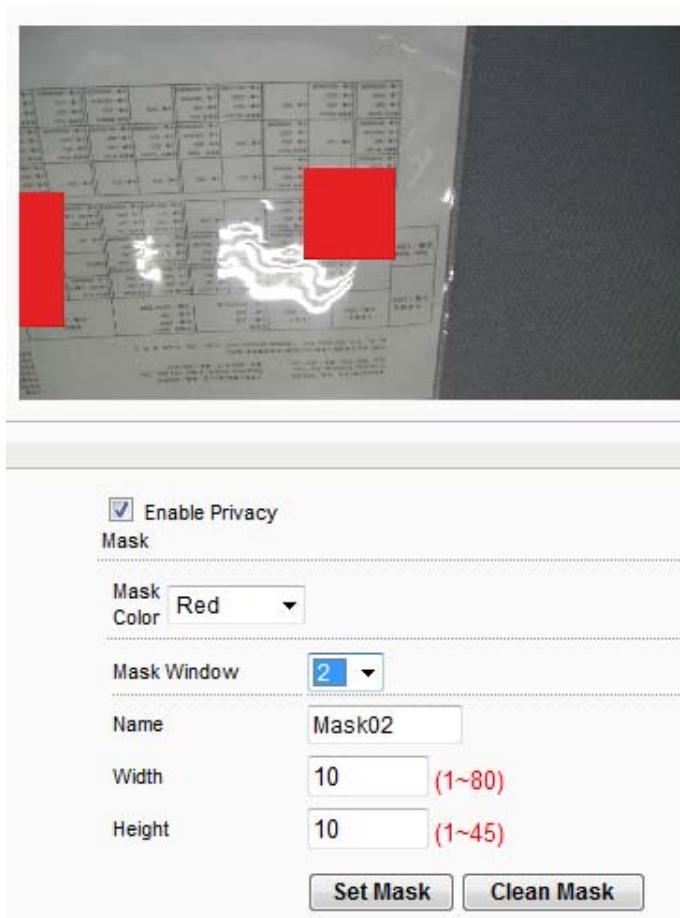
## 7.4 PTZ Control – Privacy Mask Setting

A privacy mask can be applied to regions to hide areas from viewing and triggering motion detection.



A preview window and PTZ Control panel are present in the top portion of the page. The PTZ Control panel has the same functionality as in the Live View.





Up to 24 Mask Windows can be configured. Each can be given a name (default is MaskXX), and a **Width** and **Height** are required.

**Set Mask** is used to save the mask window; the mask will automatically be centered in the preview window. There currently is no way to move the mask within the preview window, so the area to mask should be centered in the preview window.

**Clean Mask** will remove the mask that is currently selected. **Mask Color** is applied to all mask windows.

## 8 ADDING A CAMERA TO AN NVR

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The following gives some basic guidance for adding EV8x8x cameras to an NVR system that supports RTSP streaming. Please refer to the NVR instructions for specific details on how to add and administer cameras for the NVR system.

When adding a camera to an NVR, the NVR will likely require 3 configuration parameters from the camera:

- An RTSP URL
- An HTTP Port Number
- The administrator username and password

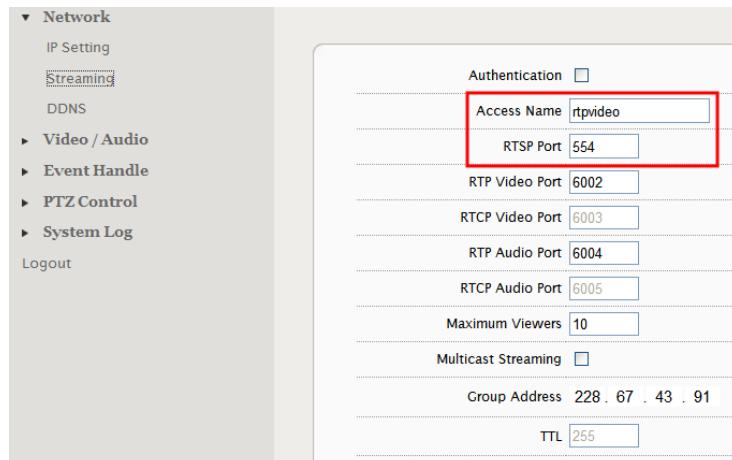
### 8.1 RTSP URL

The RTSP URL will likely be the Profile 1 stream from the camera which by default will be in the following format:

rtsp://[IP ADDRESS]/rtpvideo1.sdp

This assumes that the default port, 554, is being used, the “rtpvideo” access name is defined, and camera profile stream 1 is being used.

Below is the Stream Setting page which defines the RTSP port and the Access Name.

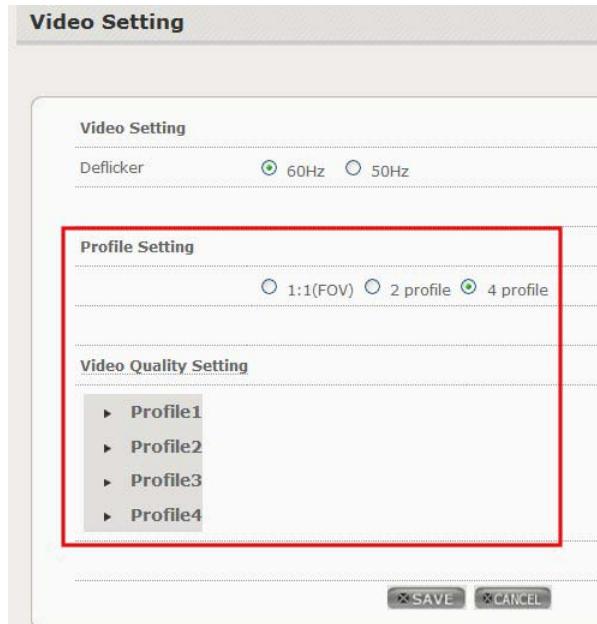


If the Access Name and/or RTSP Port have been changed, then specify the RTSP URL in the following format:

rtsp://[IP ADDRESS]:[PORT#]/[ACESSNAME]1.sdp

If “rtpvideo” was changed to “ev”: rtsp://10.1.21.138:555/ev1.sdp

The camera can be configured with multiple independent streams. The Video Settings page lists information related to the different profile streams.



To assign a specific profile stream to the NVR, then append the appropriate profile number to the access name:

rtsp://[IP ADDRESS]/[ACCESSNAME][PROFILE#].sdp  
example: rtsp://10.1.21.38/rtpvideo3.sdp

## 8.2 Administrator User & Password

The administrator username is “root” and the default password is “pass”.

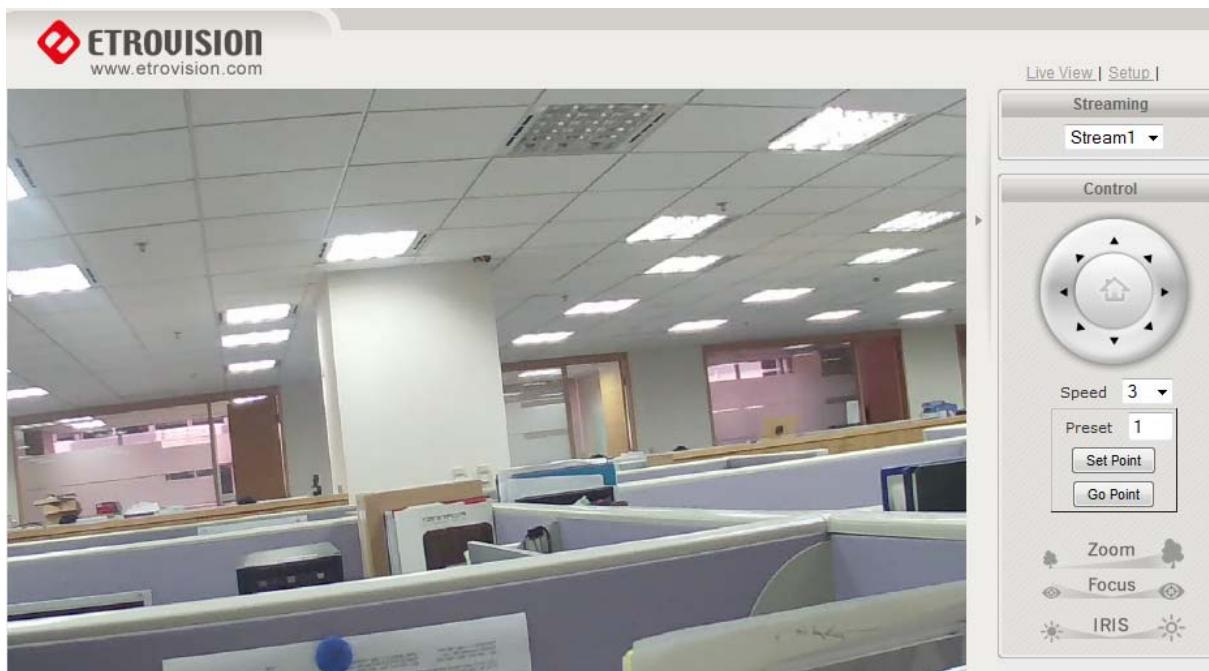
## 9 FIREFOX

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While there is support for Firefox, the Live View interface will not have many of the controls available in IE. These controls are implemented using ActiveX which is only supported by IE.

QuickTime player also is required to view video in Firefox. Installing QuickTime on a PC will provide the necessary plugin for Firefox.

Using Firefox/QuickTime plugin will result in a lag of a few seconds. This is due to QuickTime, and not a problem with the camera's streaming capability.

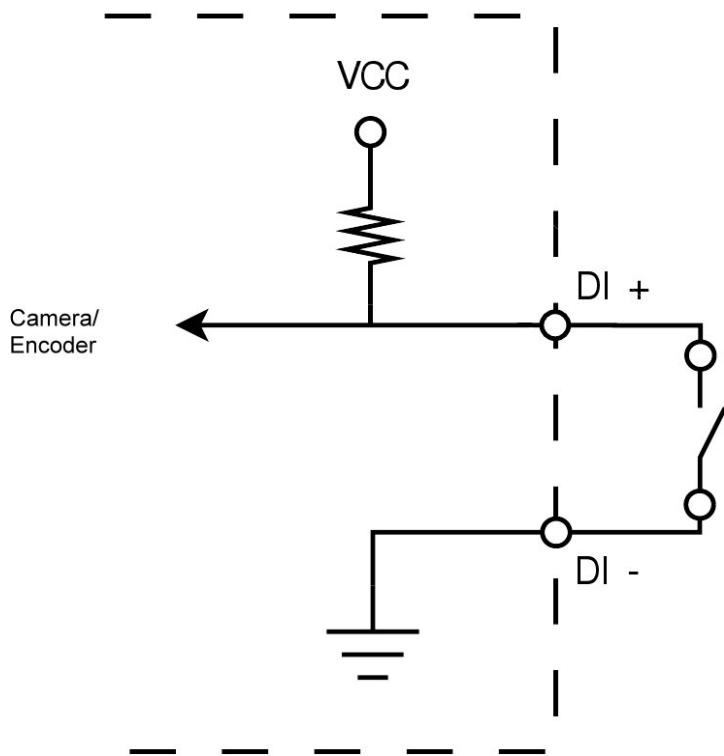


# 10 DIGITAL INPUT/OUTPUT

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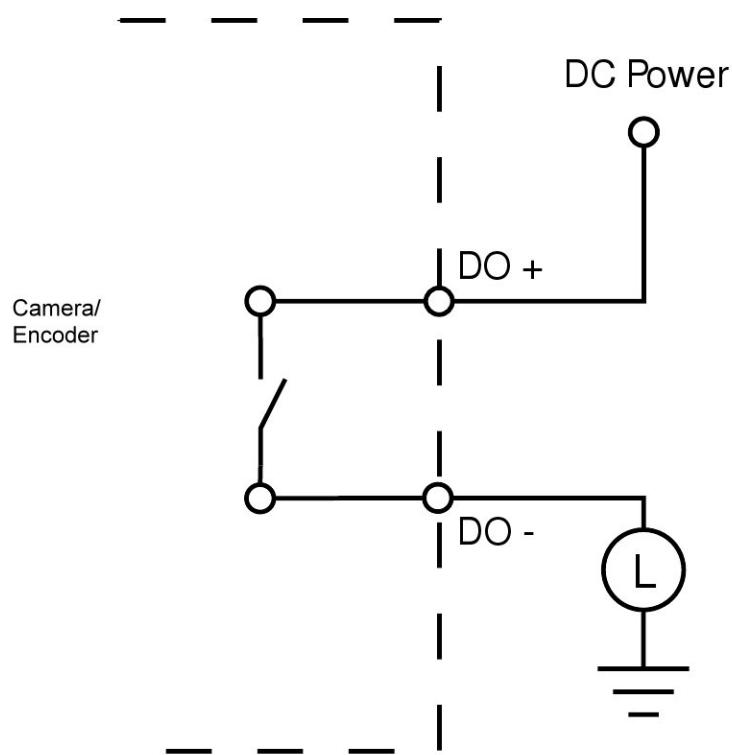
The following provides additional electrical schema and specification information.

## 10.1 Digital Input



- Ambient Temperature: 25° C
- TTL signal only
- External voltage source: 3-5Vdc ±10%
- TTL signal high/low level: 3.3V
- Max. current: 20mA

## 10.2Digital Output



- Ambient temperature: 25° C
- External power input:  $\leq 12Vdc$
- Continuous load current: 100mA
- Peak load current: 240mA (100ms / 1 shot)

# 11 DOCUMENT CHANGE LOG

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The following highlight modifications since the previous document version.

## 11.1 Document Version A

- Modified: 2 Live View  
    Changed Live View image
- Modified: 2.2 Controls & Status  
    Added EV8280 DI alert
- Modified: 2.7 Control (PTZ Control)  
    Changed PTZ control panel image  
    Added EV8280 PTZ Control layout
- Modified: 3 Setup  
    Added new System Information screen shots for latest firmware version
- Modified: 3.12 Video/Audio - Color Setting  
    Changed for new layout based on Day & Night profiles
- Added: 3.14 Video/Audio - Privacy Mask  
    Added new section; subsequent section numbering changes as a result
- Added: 7 EV8280 PTZ Control Settings